

Claims

1. A containers/vehicles inspection system with adjustable radiation X-ray angle, comprising:

a detector arm rack (15) provided in a inspection passage and equipped with a detector;

a second collimator (13);

a pulling vehicle (14) for carrying containers/vehicles to be inspected to pass through the inspection passage;

and an accelerator rack equipped with a accelerator (6), X-ray produced by the accelerator (6) is right opposite to a calibrator (11) and a first collimator (12) both which are arranged in order, the first collimator (12) is right opposite to the second collimator (13) so that the conical X-ray produced by the accelerator (6), after regulated into a sector, passes through articles to be inspected and then is received by the detector in the detector arm rack (15),

wherein the accelerator rack is composed of

a horizontal regulation mechanism (5), which is connected to the base (1), for moving the base forward and afterward along the horizontal guide rail (52);

a vertical regulation mechanism (4), which is provided in the vertical arm (7) connected to the base (1),for moving the bending framework (8) up and down vertically;

a rotary regulation mechanism (3), arranged between the horizontal end of said bending framework and said cantilever so as to make said cantilever rotate; and

a pitching adjustment mechanism (2)provided at the bottom end of said cantilever (9);

said accelerator is hinged with the pitching adjustment mechanism at the coaxial intersection of the cantilever and the pitching adjustment

mechanism through a hinging shaft and provided over the base so as to make vertical pitching movements.

2. The containers/vehicles inspection system with adjustable radiation X-ray angle according to claim 1, wherein, said horizontal regulation mechanism (5) is composed of

- a horizontal guide rail (52);
- a fifth handwheel (51) mounted at the bottom end of said base;
- a fifth screw (53) mounted in said base and connected to a rotary shaft of the fifth handwheel; and
- a fifth nut base (54), which is installed in said horizontal guide rail and threadedly connected with said fifth screw (53) so as to through the thread set, make said base move forward and afterward along said horizontal guide rail..

3. The containers/vehicles inspection system according to claim 1, wherein, said vertical regulation mechanism is composed of

- a vertical guide rail (43);
- a fourth handweel (46);
- a pinion (41) connected to the fourth handweel (46);
- a gearwheel (42)for engaging with the pinion so as to form a reducer, both of which are installed on the upper top surface of said vertical arm;
- a fourth screw (44) provided in said vertical arm (7)and connected to a driving shaft of the gearwheel (42); and
- a fourth nut base (45), which is provided in the side arm of said bending framework and threadedly connected with the fourth screw so as to through the thread set, make said bending framework move up and down along said vertical guide rail.

4. The containers/vehicles inspection system with adjustable radiation X-ray angle according to claim 1, wherein, said rotary regulation mechanism (3) is composed of

- a third handweel (31) provided on a horizontal end of said bending

framework;

a gear (32) provided on the driving shaft of said third handweel; and
a rotary support (33), of which a inner tooth ring engages with said gear and is connected to said cantilever, and a outer ring of which is connected to the lower end surface of said bending framework; thus said cantilever can be rotated through the inner tooth ring of said rotary support engaging with the gear.

5. The containers/vehicles inspection system with adjustable radiation X-ray angle according to claim 1, wherein, said pitching regulation mechanism (2) is composed of

a second handwheel (21);

a worm connected to said second handwheel;

a worm wheel engaged with said worm; and

an accelerator support rack connected with a rotary shaft of said worm wheel, on which the second handwheel is provided, for realizing the change in sector elevation angle of main X-ray beams produced by said accelerator through the worm and worm wheel set.

6. The containers/vehicles inspection system with adjustable radiation X-ray angle according to any one of claims 1-5, wherein, said detector arm rack (15) is in the mode of a bending beam or a combination mode of horizontal beam with vertical beam.